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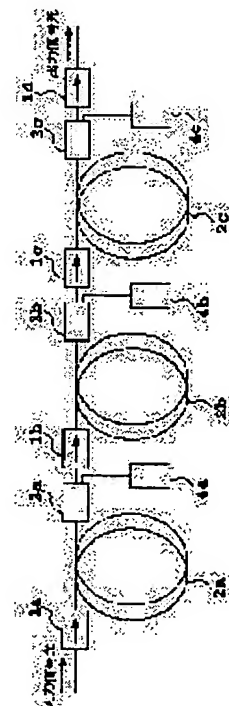
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## (54) FIBER RAMAN AMPLIFIER AND FIBER RAMAN LASER

### (57)Abstract:

PROBLEM TO BE SOLVED: To provide a fiber Raman light amplifier using tellurite glass as a light amplification medium.

SOLUTION: When a fiber is produced by using tellurite glass as the material of the fiber and a fiber Raman amplifier is constituted by using the fibers, the gain coefficient of the order of about thirty-times can be obtained as compared with that obtained when quartz glass is used as the material. When a fiber Raman amplifier is constituted by using three lines of tellurite fibers 2a, 2b, 2c whose lengths are respectively 150 m and three LD exciting light sources 4a, 4b, 4c whose wavelengths are respectively 1370 nm, 1400 nm and 1430 nm and by connecting three units in which the tellurite glass fibers 2a, 2b, 3c and the LD exciting light sources 4a, 4b, 4c are respectively combined in series and the amplifier is excited by making respective input power of exciting



lights to be 200 mW (total 600 mW), a gain equal to or larger than 23 db is obtained in a 100 nm band extending from 1.5 to 1.6  $\mu\text{m}$ .

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